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Next Generation Wireless: Riding On the Back of Millimeter Waves

Of all the wavelengths in the spectrum used for wireless data transmission, perhaps the least well known is the millimeter wave band. However, it is precisely this band (and the continuous bandwidth it provides) that enables wireless data transmission at speeds and bandwidth that compare to the high quality of fiber optic communication systems.

Millimeter waves (30-300 GHz) are a subset of the microwave band, which is itself part of the larger radio wave spectrum. These waves derive their name from the size of the wavelength, which measures from one to ten millimeters.

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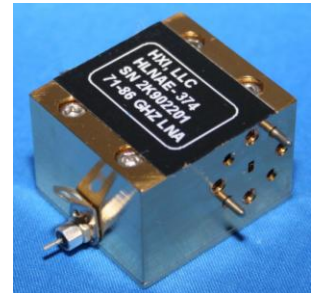
Series HLNA Low Noise Amplifiers

The HLNA Series of Low Noise Amplifiers covers the frequency ranges from 20 to 100+ GHz. A wide variety of gain and bandwidth combinations are available to provide the designer with a solution for most applications. Custom designs are available and in many cases NRE is not required. MMIC technology is employed for high reliability and repeatability.

The amplifiers can be used to lower system noise figure in communication and radar systems and also as gain blocks in LO chains and test equipment. Low noise amplifier stages can be combined with power amplifier stages for higher P1dB levels. LNAs can also be packaged with other components for custom configurations.

Each LNA contains a voltage regulator and bias sequencing circuitry allowing the use of a single bias to power the amplifier.

[Datasheet Link](#)



High Power S band Drop-in Isolator, R2H4NNB

Renaissance has developed a new low cost, high power, drop-in isolator to protect expensive amplifiers from unwanted reflected power levels at S band frequencies. Covering 2.7 - 2.9 GHz, this isolator provides a VSWR of 1.25:1 at input and output ports with loss of 0.4 dB and isolation of 20 dB over -30 to +85 C.

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Systems, this isolator can be provided in phased matched sets.

[Datasheet Link](#)

For more information about Renaissance/HXI products contact us at 978-772-7774 or visit www.rec-usa.com / www.hxi.com.

4.5kW Peak Power L-Band Drop-in Circulator, 3G3NAG

Renaissance has released a new L-band 4.5 kW peak power drop-in circulator operating from 1 to 1.12 GHz. With insertion loss of less than 0.2 dB and with return loss and isolation over 23 dB, the circulator is ideal to duplex an antenna with HPA and a receiver.



This circulator has been customized to withstand 50W of forward and 100 W of reverse power at the same instance without arcing or corona failures.

[Datasheet Link](#)

For more information about Renaissance/HXI products contact us at 978-772-7774 or visit www.rec-usa.com / www.hxi.com

1.02 - 1.04 GHz, Drop-in, High Power Isolator, 2H2NFG

Renaissance has designed a high power drop-in isolator for IFF transceiver application. Covering 1020 - 1040 MHz, this isolator has just 0.40 dB of insertion loss over -30 to +70 C while handling 100 W Forward and Reverse power levels.

The design is covered under a US Patent that transfers all of the 100 W reflected to a thermally heat sunk portion of the steel housing.



[Datasheet link](#)

For more information about Renaissance/HXI products contact us at 978-772-7774 or visit www.rec-usa.com / www.hxi.com.

